

What is claimed is:

1. A parking lot management system comprising:

a sever for managing parking information about a parking lot having a plurality of parking spaces;

a plurality of wireless LAN base stations installed in the parking lot for wirelessly transmitting and receiving the parking information, each of the plurality of wireless LAN base stations having a transmittable and receivable area, the plurality of wireless LAN base stations forming a wireless LAN system such that each of the plurality of wireless LAN base stations can wirelessly connect to a wireless LAN mobile station of a mobile object when the mobile object exists in its own transmittable and receivable area; and

communication means for communicating the parking information between the plurality of wireless LAN base stations and the server via an IP network operating with internet protocol,

wherein the wireless LAN mobile station and the server can communicate the parking information through the wireless LAN system and the communication means.

2. The parking lot management system according to claim 1 further comprising a plurality of parking condition detection devices respectively corresponding to the plurality of parking spaces,

wherein each of the plurality of parking condition detection devices includes parking condition detecting means for detecting a parking condition showing whether the

corresponding parking space is occupied or not by a vehicle, and outputs a parking condition signal showing the parking condition,

the server includes parking condition registration means for identifying and registering the parking condition signal per each parking space,

the wireless LAN system is configured such that each of the plurality of wireless LAN base stations is wirelessly connected to the corresponding parking condition detection devices within its own transmittable and receivable area, and

the parking information is communicated between the plurality of parking condition detection devices and the server through the wireless LAN system and the communication means, and the parking condition signal is supplied to the server so as to be registered by the parking condition registration means.

3. The parking lot management system according to claim 2, wherein the server periodically outputs a parking condition detection request signal, which requests detection of the parking condition, to each of the plurality of parking condition detection devices through the wireless LAN system and the communication means, and

each of the parking condition detection devices detects the parking condition in response to the parking condition detection request signal.

4. The parking lot management system according to claim 2, wherein each of the parking condition detection devices

includes a sensor to read a barcode provided at the corresponding parking space, and

each of the parking condition detection devices makes such a decision that the vehicle is parked when the sensor can read the barcode, whereas the parking condition detection device makes such a decision that the vehicle is not parked when the sensor can not read the barcode.

5. The parking lot management system according to claim 2, wherein the server includes parking condition information generating means for extracting the registered parking condition signal and for generating a parking condition information signal which indicates the parking condition, and

the server supplies the parking condition information signal to the wireless LAN mobile station through the wireless LAN system and the communication means.

6. The parking lot management system according to claim 5, wherein the mobile object generates a parking condition information request signal requesting parking condition information and supplies the parking condition information request signal to the wireless LAN mobile station,

the parking condition information generating means generates the parking condition information signal in response to the parking condition information request signal, and

the parking condition information request signal is supplied from the wireless LAN mobile station to the server through the wireless LAN system and the communication means.

7. The parking lot management system according to claim 6, wherein the server detects a certain number of parking spaces near the wireless LAN mobile station in response to the parking condition information request signal, and

the parking condition information generating means extracts the parking condition signals respectively corresponding to the certain number of parking spaces and generates the parking condition information signals.

8. The parking lot management system according to claim 5, wherein the parking condition information signal includes a voice signal which indicates a non-occupied parking space by voice.

9. The parking lot management system according to claim 8, wherein the mobile object has a software to produce the voice in response to the voice signal.

10. The parking lot management system according to claim 5, wherein the parking condition information signal includes an image signal which displays a map near the wireless LAN mobile station and indicates a non-occupied parking space in the displayed map.

11. The parking lot management system according to claim 10, wherein the software displays the map and the non-occupied parking space in response to the image signal.

12. The parking lot management system according to claim 1, wherein the server includes vehicle position registration means for identifying and registering a vehicle position signal, which shows a vehicle position, in connection with

the wireless LAN mobile station,

the mobile object generates the vehicle position signal and supplies the vehicle position signal to the wireless LAN mobile station, and

the vehicle position signal is supplied from the wireless LAN mobile station to the server through the wireless LAN system and the communication means.

13. The parking lot management system according to claim 12, wherein the server includes vehicle position information generating means for extracting the registered vehicle position and for generating a vehicle position information signal which indicates the vehicle position, and

the vehicle position information signal is supplied from the server to the wireless LAN mobile station through the wireless LAN system and the communication means.

14. The parking lot management system according to claim 13, wherein the mobile object generates a vehicle position information request signal requesting vehicle position information and supplies the vehicle position information request signal to the wireless LAN mobile station,

the vehicle position information generating means generates the vehicle position information signal in response to the vehicle position information request signal,

the vehicle position information request signal is supplied from the wireless LAN mobile station to the server through the wireless LAN system and the communication means.

15. The parking lot management system according to claim

13, wherein the vehicle position information signal includes a voice signal which indicates the vehicle position by voice.

16. The parking lot management system according to claim 15, wherein the mobile object has a software to prepare and utter the voice to indicate the vehicle position in response to the voice signal.

17. The parking lot management system according to claim 13, wherein the vehicle position information signal includes an image signal which displays a map near the wireless LAN mobile station and indicates the vehicle position.

18. The parking lot management system according to claim 17, wherein the software displays the map and the vehicle position in response to the image signal.

19. The parking lot management system according to claim 13, wherein the plurality of parking spaces respectively has lighting systems to indicate the vehicle position,

the vehicle position information signal includes a lighting control signal to indicate the vehicle position by activating one of the plurality of lighting systems,

the wireless LAN system is configured such that the plurality of wireless LAN base stations are wirelessly connected to the plurality of lighting systems within the respective transmittable and receivable areas,

the lighting control signal is supplied from the server to the one of the plurality of lighting systems through the wireless LAN system and the communication means, and

the one of the plurality of lighting systems are

activated in response to the lighting control signal.

20. The parking lot management system according to claim 1, wherein additional wireless LAN base stations are provided at an entrance and an exit of the parking lot,

the wireless LAN system is configured such that the wireless LAN base stations provided at the entrance and the exit are wirelessly connected to the mobile object within respective transmittable and receivable areas so as to detect entering or exiting of the wireless LAN mobile station into and from the parking lot,

an entering signal and an exiting signal showing the entering and the exiting of the wireless LAN mobile station are generated by the wireless LAN base stations provided at the entrance and the exit,

the entering signal and the exiting signal is supplied to the server by the communication means, and

the server detects entering time and exiting time based on the supplied entering signal and the exiting signal, so that the entering time is identified and registered in connection with the wireless LAN mobile station, and that the exiting time is identified and registered in connection with the wireless LAN mobile station having the registered entering time.

21. The parking lot management system according to claim 20, wherein the wireless LAN mobile station generates a parking time request signal requesting a presentation of a parking time and/or a parking fee,

the parking time request signal is supplied to the server through the wireless LAN system and the communication means,

the server extracts the entering time in response to the parking time request signal, and calculates the parking time and the parking fee based on the entering time and present time, so as to generate a parking time information signal presenting the parking time and the parking fee, and

the parking time information signal is supplied from the server to the wireless LAN mobile station through the wireless LAN system and the communication means.

22. The parking lot management system according to claim 21, wherein at least one more wireless LAN base stations is provided at a store which ties up with the parking lot so that the parking information can be communicated at the store.